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SOURCE Vestnik Mashinostroyeniya, No 5, May 1951.

DRAGLINE POWER SYSTEM
COORDINATES HOIST, DRAG MOTORS

The electrical apparatus in the ESh 14/65 walking dragline has a motor-generator set, hoist, drag, and swing motors, pumping unit for operation of the hydraulic walking mechanisms, amplidyne booster set, and their control mechanisms.

The motor-generator set consists of six self-ventilating machines mounted on a single frame. Single-unit direct-current generators with amplidyne control feed the current for the main drive motors. The high-voltage circuits and the current collectors are installed in a special compartment at the center of the turning platform.

The coordination of the operation of the hoist and drag motors is particularly important. As the load on the drag motor increases radically, (when the bucket goes too deeply into the ground) a relay current goes into operation, and the current is increased in the hoist motor, which then automatically starts to raise the bucket out of the ground.

It is considered feasible to rig the ESh 14/65 with buckets of 10, 18, and 22-cubic-meter capacity, and booms of 50, 60, and 75-meter length, keeping the basic specifications of the machine the same.

Specifications

Bucket capacity (cu m)	14
Length of boom (m)	65
Estimated rate in digging earth of No 4 category and depositing it in a pile after swinging through an arc of 100 degrees (cycles/min)	1.1
Average pressure exerted on ground through supporting base (kg/cu cm)	0.8
Average pressure exerted on ground by shoes (kg/cu cm)	1.27
Distance travelled in complete walking cycle (m)	2.
Traversing speed (km/hr)	0.18

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SECRETS-E-C-R-E-TSpecifications

Maximum angles of ascent and descent along which machine can maneuver (degrees)	10. 87.
Maximum drag force exerted (tons)	
Speed of drag cable, motor operating at 80 percent of maximum moment (m/sec)	2.1 70.
Maximum lifting force (tons)	
Speed of hoist cable, motor operating at 80 percent of maximum moment (m/sec)	2.4 20-30
Angle of inclination of boom (degrees)	1,150.
Weight of dragline (tons)	
Dimensions (m):	19.8
Length of cab	11.2
Width of cab	11.5
Height of cab roof above earth	24.6
Height of superstructure above ground	19.6
Walking mechanism tread	16.3
Length of walking shoes	2.5
Width of walking shoes	14.0
Diameter of supporting base	
Power of main electric motor, (kw):	2 x 540
Hoist	2 x 540
Drag	2 x 250
Swing	2 x 260
Walking mechanisms	6,000
Voltage of feeder current (kw) <u>[sic]</u>	

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